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ABSTRACT

The Learning and Working Styles Inventory (LWSI) (H. Hendrix-Frye, 1997) is an economically priced inventory administered to individuals to assess their learning styles and to identify preferred working conditions. The inventory may be administered individually or in a group setting to students in grade 7 through college in computer, audiovisual, and paper-and-pencil forms. The LWSI is a self-directed measure that divides learning and working styles into five domains: physical, social, environmental, mode of expression, and work characteristics. Twenty-five separate styles are assessed in the 5 domains. Norms were determined for the physical, social, environmental, and mode of expression domains using norming groups of 1,200 individuals from grades 9 through 12. Reliability coefficients ranged from 0.56 to 0.91 with a media coefficient of 0.82, and validity correlation coefficients ranging from 0.66 to 1.00 with a median of 0.92. Some revisions should be made to improve reliability and validity for the LWSI, but its overall appearance and ease of scoring make it user friendly. Because it is a new instrument, many more studies are needed to assess its reliability, validity, and overall effectiveness. (SLD)

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A Review of the Learning and Working Styles Inventory

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Rhonda Blackburn

Title: Learning and Working Styles Inventory – Vocational Edition (LWSI)
Author: Helena Hendrix-Frye
Publisher: Piney Mountain Press, Inc.
Date of Publication: 1997
Date of most recent norming sample: prior to 1997
Date of most recent manual: 1997
Time required to administer: less than 20 minutes
Selected Costs:

- Learning/Working Styles Media Kit (includes 1 guide, 1 video, computer software IDOS/Windows/CD-ROM/MAC), 100 reproducible response forms, 1 briefcase, 1 site license (English/Spanish)) - $495.00
- Learning/Working Styles Multimedia CD Version - $395.95 (Network Version - $989.88)
- Learning/Working Styles Software Pack (includes software (DOS/Windows/CD-ROM/MAC), 1 guide, 1 set of reproducible response forms (English/Spanish)) - $195.00 (Network Version - $486.50)
- Learning/Working Styles Video (includes 1 guide, 1 reproducible response form, 1 video, 1 scoring disk (DOS/Windows/CD-ROM/MAC) (English/Spanish)) - $349.95
- Enhanced Learning/Working Styles Inventory (includes CD-ROM) - $49.95
- Scoring Services: Machine scoring - $.50 per card, Publisher scored - $1.50 per person

Description

The LWSI is an economically priced inventory administered to individuals to assess their learning style and identify their preferred working condition. The inventory may be administered individually or in a group setting. The LWSI may be useful from 7th grade to post-secondary education settings that train and retrain individuals to enter the workforce. This can include special needs populations. The methods of administration that are available include pencil-and-paper, audiovisual, or computer-based.

The LWSI is a self-directed measure, which divides learning and working styles into five separate domains: physical, social, environmental, mode of expression, and work characteristics. Each domain is broken down into styles. There are 25 separate styles assessed by the five domains. The physical domain includes kinesthetic, visual, tactile, and auditory. The social domain is divided between individual and group. The environmental domain includes design,

lighting, temperature, and sound. Mode of expression is separated into oral and written. Work characteristics examine place, location, labor, people, and things. The above domains and styles are determined through responding to 75 questions using a four-point Graphic Rating Scale from "Most Like Me" (4) to "Least Like Me"(1). Each style is assessed by three questions. The sum of the questions is added and then multiplied by 2 to determine the score for each scale, which can range from 6 to 24.

The inventory can be scored several ways. If it is administered by computer, it will be automatically scored. If the inventory is administered by pencil-and-paper, it can be scored by hand or by computer. If it is administered audiovisually, it can be scored by hand, by computer, or by a scanner. The scanning procedures can be accomplished using a Scantron 8000 series directly attached to the computer or by sending it to the publisher for electronic scoring.

The results of the LWSI are reported for each individual on a printout. The printout includes a profile of the styles, which are divided into three categories: major (a preferred learning or working style), minor (a secondary learning or working style), or negligible (a non-preferred learning or working style). The scores for a major style range from 18-24 and a minor style range from 13-17. Any score below 13 is considered negligible. Along with the profile sheet, a teaching techniques sheet is provided that describes the major styles for each individual. The administrator can also combine the scores for a number of individuals into a group profile. The group profile portrays the major styles for a group and shows the style distinctions between the group members.

Practical Evaluations

The LWSI is a new and unique way to measure an individual's environmental preferences. The various media, including computer-based, audiovisual, and pencil-and-paper,

make this inventory attractive. When using the video or the multimedia CD/ROM, the directions are presented orally and visually, along with each statement on the inventory. For a participant who has a limited understanding of the English language or is a poor reader, the pencil-and-paper version can be administered orally in a one-on-one setting. This makes the inventory accessible to all populations, including At-Risk, Special Needs, College Prep, and Tech Prep. The inventory is also available in Spanish.

In addition to being accessible, the inventory is quite easy to use and administer. Respondents need to know how to fill-in a box on the response sheet corresponding to their answer or, when using the computer, place a 1, 2, 3, or 4 in the box and click "next". Since there are no test booklets, and no response sheets with the computer program, the inventory materials last as long as the media in which they are presented or until the inventory is out of date.

The administration and scoring of the inventory is simple with understandable and concise directions presented in the Guide. Completed inventories can be hand scored, entered directly into the computer, or sent to the publisher for scoring. Hand scoring the inventories requires no psychometric or technical training. Teachers and counselors are quite competent to both score and interpret the results. The computer-based results can be obtained from computer printouts or saved on a disk for future editing or printing.

Rapport could be important to increase the motivation and interest in the respondents to complete the inventory. It is imperative that the administrator explains to the respondents that "this inventory is not a test, but a way to help find out how you prefer to learn or work". Once the respondents begin, they will see that the statements assess how they prefer to learn or work. That is, the inventory demonstrates strong face validity.

Technical Evaluation

Norms were determined for the physical, social, environmental, and mode of expressions domains. There are no norms presented in the technical report for the work characteristics. The norming groups consisted of 1,200 individuals ranging from 9th to 12th grade. The sample was a group of mainstreamed, special needs and regular students. The group consisted of 615 males and 585 females. Mean scores and standard deviations were obtained for each style within the four domains. No other information is given to explain how to use the mean score and standard deviation to interpret an individual score (e.g., standard scores or percentiles).

Reliability coefficients were obtained on the 25 styles of the LWSI using a sample of 50 male and 50 female of both special needs and regular high school students ranging from 9th to 12th grade. The test-retest method of estimating reliability was employed. The period of time between tests was not given, but the reliability coefficients ranged from .56 to .91 with a median coefficient of .82.

Concurrent validity was assessed by correlating 16 of the 25 styles in the LWSI with the Dunn and Dunn Learning Styles Inventory (LSI). The LSI is a standardized instrument that has been researched extensively. For this study, the LWSI was administered to 150 At-Risk, Vocational, and Gifted high school students, and six days later the LSI was administered to the same group. The resulting correlation coefficients ranged from .66 to 1.00 with a median coefficient of .92.

The Technical Report states that content and construct validity were developed by the author from experience working as an instructor and vocational evaluator. Furthermore, the Technical Report states that she based her construction of the inventory in regards to "number of items, content of the items, report content, and presentation formats ... on the following

considerations: her experience with various standardized learning styles instruments; her involvement with special needs learners and vocational students; her approach to various teaching styles; her relationship with academic teachers, administrators and parents; her familiarity with IEP and IVEP development" (p. 2).

Summary Evaluation

Since this is a new instrument, no previous reviews were available in the literature. The LWSI is a unique way to examine learning styles in conjunction with preferred working conditions. As stated in the Technical Report, the LWSI can be used by teachers and counselors to provide "a quick, inclusive, nontechnical, inexpensive method of assessing individuals' opinion about how they prefer to learn and work" (p. 1). With the various media, the instrument is easy to administer and score. In addition, the inventory is accessible to a wide range of students from At-Risk and Special Needs to College Prep and Tech Prep.

However, there are a few criticisms regarding the LWSI. The four-point Graphic Rating Scale scoring procedure may not provide for sufficient differentiation between an individual's major, minor, or negligible style usage. To help detect a greater degree of distinction between the styles, a five-point Graphic Rating Scale could be employed.

Along with changing the scale, several statements could be re-written to be more clear. For example, statement number 26 reads "Tapping my foot or fingers helps me to study or learn". This could be interpreted in several ways. An individual may read it as a kinesthetic activity (which is the intent) or as a noise factor. The individual's answer may be different depending on the interpretation. The statement could be re-written to state "Moving my foot or fingers helps me to study". This provides a clearer meaning of what the question is intended to assess. In addition to statement 26, several other statements were vague and hard to understand.

For a true understanding of learning or working styles, the inventory items must be clear to all test takers.

There are major problems with both reliability and validity that need to be addressed. Internal consistency needs to be assessed for all scales with an adequate sample. Also, with only three items per scale, it is unlikely that scale scores would be stable over time. Increasing the number of items to assess each scale within the five domains should increase the reliability. In addition to reliability, construct validity needs to be approached from a theoretical and measurement perspective. For example, factor analysis would not likely support 25 different scales, but could discover what scales or items relate to each domain. Content validity should be continually assessed through research and follow-ups to determine the appropriateness of the scales and items used.

Though there are revisions that could be made, the overall appearance and the ease of the scoring process of the LWSI makes it user friendly. The publisher suggests that the inventory be incorporated into a battery of tests that assess an individual's learning style and working preferences along with other career assessments. Using the LWSI as [art of a battery would help to interpret the meaning of the individual's preferred ways to learn and work. However, since the LWSI is a new instrument, many more studies and reviews need to be conducted to assess the reliability, validity and overall effectiveness of the instrument.

References

Learning and Working Styles Inventory Vocational Edition Guide. (1997). Cleveland, GA: Piney Mountain Press, Inc.

Learning/Working Styles Inventory Technical Report. (1997). Cleveland, GA: Piney Mountain Press, Inc.